Claims

Sub B1

What is claimed is:

1. A method of automating navigation between data with dissimilar structures including a source dataset containing one or more data elements and at least one target dataset containing one or more data elements, the method comprising the steps of:

determining at least one collection of data elements from the at least one target dataset that best matches a collection of data elements from the source dataset; and

computing at least one distance metric between the at least one target collection and the source collection such that a user can select the at least one target collection given the at least one computed distance metric.

2. The method of Claim 1, wherein there is a plurality of target datasets from which respective best matching target collections are determined and respective distance metrics are computed such that the computed distance metrics are presented to the user in a ranked order.

3. The method of Claim 2, wherein the presenting step further includes presenting the respective target collection to the user along with the respective computed distance metric.

4. The method of Claim 3, wherein the presenting step further includes presenting a respective name associated with the target dataset to the user along with the respective target collection and the computed distance metric.

5. The method of Claim 1, wherein the source collection of data elements is specified by a source collection descriptor and the at least one target collection of data elements is specified by a target collection descriptor.

6. The method of Claim 5, wherein the data is organized in a relational database and further wherein the determining step includes deleting at least one attribute associated with the target collection descriptor that is not present in the source collection descriptor.

7. The method of Claim 5, wherein the data is organized in a multidimensional database and further wherein the determining step includes performing at least one drill-up operation on the target collection descriptor.

8. The method of Claim 1, wherein the determining step further includes the steps of:

generating at least one preliminary target collection descriptor associated with the at least one target collection by transforming a source collection descriptor associated with the source collection; and

removing constraints associated with the at least one preliminary target collection descriptor until a non-null element collection is obtained.

9. The method of Claim 1, wherein the source collection of data elements is specified by a source collection descriptor and the at least one target collection of data elements is specified by a target collection descriptor and further wherein the computing step includes calculating the difference between constraints in the source collection descriptor and the target collection descriptor to compute the distance metric.

10. The method of Claim 9, wherein attributes of the constraints are weighted in accordance with their importance.

11. The method of Claim 10, wherein the distance metric is proportionally larger when the source and target collection descriptors differ by an attribute of a constraint that has a heavier weight associated therewith.

Sub B2

12. Apparatus for automating navigation between data with dissimilar structures including a source dataset containing one or more data elements and at least one target dataset containing one or more data elements, the apparatus comprising:

at least one processor operable to determine at least one collection of data elements from the at least one target dataset that best matches a collection of data elements from the source dataset, and to compute at least one distance metric between the at least one target collection and the source collection such that a user can select the at least one target collection given the at least one computed distance metric; and

a memory coupled to the at least one processor for storing the at least one target dataset.

13. The apparatus of Claim 12, wherein there is a plurality of target datasets from which respective best matching target collections are determined and respective distance metrics are computed such that the computed distance metrics are presented to the user in a ranked order.

14. The apparatus of Claim 13, wherein the at least one processor is further operable to present the respective target collection to the user along with the respective computed distance metric.

15. The apparatus of Claim 14, wherein the at least one processor is further operable to present a respective name associated with the target dataset to the user along with the respective target collection and the computed distance metric.

16. The apparatus of Claim 12, wherein the source collection of data elements is specified by a source collection descriptor and the at least one target collection of data elements is specified by a target collection descriptor.

17. The apparatus of Claim 16, wherein the data is organized in a relational database and further wherein the at least one processor is operable to perform the determining operation by deleting at least one attribute associated with the target collection descriptor that is not present in the source collection descriptor.

18. The apparatus of Claim 16, wherein the data is organized in a multidimensional database and further wherein the at least one processor is operable to perform the determining operation by performing at least one drill-up operation on the target collection descriptor.

19. The apparatus of Claim 12, wherein the at least one processor is further operable to perform the determining operation by generating at least one preliminary target collection descriptor associated with the at least one target collection by transforming a source collection descriptor associated with the source collection, and removing constraints associated with the at least one preliminary target collection descriptor until a non-null element collection is obtained.

20. The apparatus of Claim 12, wherein the source collection of data elements is specified by a source collection descriptor and the at least one target collection of data elements is specified by a target collection descriptor and further wherein the at least one processor is operable to perform the computing operation by calculating the difference between constraints in the source collection descriptor and the target collection descriptor to compute the distance metric.

21. The apparatus of Claim 20, wherein attributes of the constraints are weighted in accordance with their importance.

22. The apparatus of Claim 21, wherein the distance metric is proportionally larger when the source and target collection descriptors differ by an attribute of a constraint that has a heavier weight associated therewith.

Sub B3

23. An article of manufacture for automating navigation between data with dissimilar structures including a source dataset containing one or more data elements and at least one target dataset containing one or more data elements, comprising a machine readable medium containing one or more programs which when executed implement the steps of:

determining at least one collection of data elements from the at least one target dataset that best matches a collection of data elements from the source dataset; and

computing at least one distance metric between the at least one target collection and the source collection such that a user can select the at least one target collection given the at least one computed distance metric.

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